NASA Air Quality-Focused Remote Sensing for EPA Applications

March 21, 22, & 23, 2023

US EPA, 109 T.W. Alexander Dr, Durham, NC 27709

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Day 1 (Tuesday, March 21)
Part 1: Introduction to Satellite Air Quality Measurements & Tools

8:00-8:30 - Registration

8:30-9:00 - Opening, Introductions, & Logistics

9:00-9:30 - Review of Current EPA Satellite Applications

9:30-10:00 - Introduction to Satellite Remote Sensing

10:00-10:30 - Satellite Imagery, Data Formats, and Access

10:30-10:45 - Break

10:45-11:15 - Exploring Satellite Imagery Using NASA Worldview & Giovanni

11:15-12:00 - Introduction to GEO sensors and exploring Aerosol Watch

12:00-1:00 - Lunch

Part 2: Fires, Smoke, and Trace Gases

1:00-2:15 - Satellite-Based Fire Products: Methods, Data Access, and Applications

2:15-2:45 - Smoke Monitoring from Space

2:45-3:00 - Break

3:00-4:00 - Remote Sensing of Trace Gases and Products

4:00-4:45 - Trace Gases Data Access & Visualization

4:45-5:00 - Review & Discussion

Day 2 (Wednesday, March 22)
Part 3: Estimation of Ground Level PM2.5 Concentrations with Satellite Data

8:30-9:00 - Q&A and Review of Day 1

9:00-10:00 - Aerosol Observations from Satellites: Theory & Existing Products

10:00-10:15 - Download Level 2 Aerosol Data

10:15-10:30 - Break

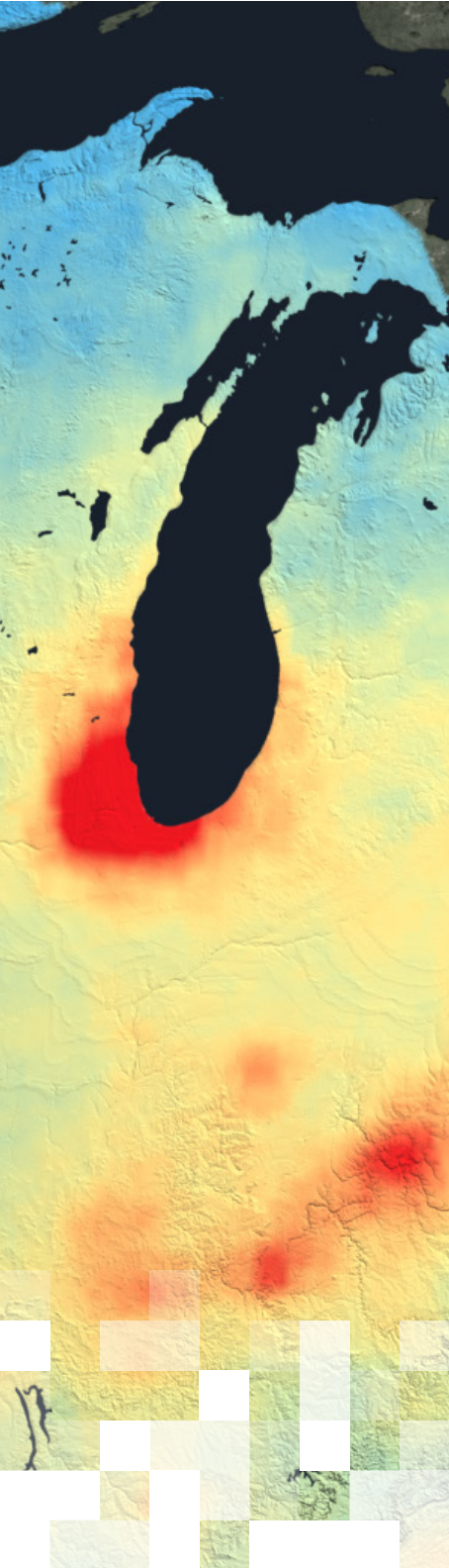10:30-11:30 - Theoretical Basis for Converting Satellite Observations to Ground-Level PM2.5 Concentrations

11:30-12:00 - Conversion of Satellite Aerosol Measurements to PM2.5 Air Quality

12:00-1:00 - Lunch

1:00-2:00 - Using Python Scripts to Read, Map, and Extract Aerosol Data

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Day 2 (Wednesday, March 22)(Continued)

Part 4: Satellite-Based Emissions and NASA GEOS

2:00-3:00 - Aerosol Products from Geostationary Satellites

3:00-3:15 - Break

3:15-3:45 - Satellite-Based PM2.5 Datasets

3:45-4:45 - Satellite-Based Estimations of Trace Gas Surface Concentrations/ Emissions

4:45-5:00 - Review & Discussion

Day 3 (Thursday, March 23)

Part 4: Satellite-Based Emissions and NASA GEOS

8:30-9:00 - Q&A and Review of Days 1 & 2

9:00-10:00 - NASA Forecasts and the MERRA-2 Reanalysis

10:00-10:15 - Break

10:15-11:15 - RSIG

11:15-12:00 - Capstone Notebook

12:00-1:00 - Lunch

Part 5: Case Study Analysis

1:00-1:30 - Tools and Resources for Case Studies

1:30-3:30 - Case Study Analysis in Groups

3:30-3:45 - Break

3:45-4:45 - Case Study Presentations and Discussion

4:45-5:00 - Training Review & Feedback

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